

Amendments to the Claims

1. (original) A phonetic data processing system comprising:

- BM
- AN
- A. a computer processing device having access to a memory;
 - B. a rich semantic grammar (RSG) stored in said memory and comprising one or more grammars comprising syntactic information and semantic information; and
 - C. a phonetic data processing module, executable by said processing device, said module comprising:
 - (1) a phonetic searcher, configured to generate using syntactic analysis, as a function of syntactic information derived from said RSG and a received phonetic stream comprised of phonetic estimates, a set of sequences comprising a set of best words from said RSG corresponding to said phonetic estimates; and
 - (2) a semantic parser module, configured to generate a context free set of semantic data from said sequences and said RSG, wherein said set of semantic data includes all valid interpretations of the sequences.

2. (original) A system as in claim 1, wherein each of said sequences comprises set of words combined to define word paths.

3. (original) A system as in claim 1, wherein said phonetic searcher is configured to extract a context free grammar (CFG) comprising syntactic information from said RSG and is further configured to access said CFG to generate said set of best words.

4. (original) A system as in claim 1, wherein each of said phonetic estimates has a fixed start time and a plurality of end times, and wherein there is a score associated with each end time corresponding to the likelihood that a given phonetic estimate is a word or a syllable in said RSG.

B7
5. (original) A system as in claim 4, wherein said phonetic searcher includes a grammar builder configured to selectively combine words from said set of best words into sequences, as a function of the start time and end times of said phonetic estimates corresponding to said words.

6. (original) A system as in claim 5, said phonetic searcher is configured to combine said words using dynamic programming.

A7
7. (presently amended) A phonetic data processing system as in claim 1, comprising:

A. a computer processing device having access to a memory;

B. a rich semantic grammar (RSG) stored in said memory and comprising one or more grammars comprising syntactic information and semantic information; and

C. a phonetic data processing module, executable by said processing device, said module comprising:

(1) a phonetic searcher, configured to generate, as a function of said RSG and a received phonetic stream comprised of phonetic estimates, a set of sequences comprising a set of best words from said RSG corresponding to

said phonetic estimates; and

- PM (2) a semantic parser module, configured to generate a set of semantic data from said sequences and said RSG, wherein said set of semantic data includes all valid interpretations of the sequences,

wherein said RSG is a context free grammar tree comprising nodes having certain of said syntactic and semantic information associated with each of a plurality of said nodes.

8. (currently amended) A system as in claim 1, wherein said semantic information includes one or more categories, and each category may dictates an interpretation of semantic data at a corresponding node word.

9. (currently amended) A system as in claim 1, wherein said semantic information includes one or more operators at any tree node, and each operator ~~defines~~ dictates an interpretation for a sub-tree at a corresponding node ~~a manner of combining a plurality of words.~~

10. (original) A system as in claim 1, further comprising:

- (3) an application program, configured to receive said set of semantic data and to define context information associated with said phonetic stream;
- (4) a semantic evaluator, configured to interpret said set of semantic data in accordance with said context information and to derive a linguistic result therefrom.

11. (original) A system as in claim 10, wherein said set of semantic data is represented as a tree

B1
of nodes representing all valid interpretations of said word sequences and said semantic evaluator is configured to determine a category at each node, as a function of said context information, and to apply to values at each node a corresponding category to determine said linguistic result.

12. (currently amended) A phonetic data processing system as in claim 1, comprising:

- A. a computer processing device having access to a memory;
- B. a rich semantic grammar (RSG) stored in said memory and comprising one or more grammars comprising syntactic information and semantic information; and
- C. a phonetic data processing module, executable by said processing device, said module comprising:
- (1) a phonetic searcher, configured to generate, as a function of said RSG and a received phonetic stream comprised of phonetic estimates, a set of sequences comprising a set of best words from said RSG corresponding to said phonetic estimates; and
- (3) a semantic parser module, configured to generate a set of semantic data from said sequences and said RSG, wherein said set of semantic data includes all valid interpretations of the sequences,

A1
wherein said set of semantic data is a semantic tree comprised of a set of nodes representing all valid interpretations of said sequences.

13. (currently amended) A method of processing phonetic data, comprising:

- BM
- A. defining in a memory a ~~context-free~~ rich semantic grammar (RSG) comprising syntactic and semantic information;
 - B. receiving a phonetic stream comprising phonetic estimates;
 - C. generating, using syntactic analysis, a set of sequences comprised of best words, as a function of syntactic information derived from said RSG and said phonetic stream;
 - D. generating, from said sequences and said RSG, a context free set of semantic data including all valid interpretations of said sequences.

14. (original) A method as in claim 13, wherein each of said sequences is comprised of a set of words combined to define word paths.

15. (original) A method as in claim 13, wherein said phonetic searching includes extracting a context free grammar comprising syntactic information from said RSG.

AM

16. (original) A method as in claim 13, wherein said phonetic searching includes:

- (1) determining for each of said phonetic estimates a fixed start time and a plurality of end times; and
- (2) determining a score associated with each end time corresponding to the likelihood that a given phonetic estimate is a word or a syllable in said RSG.

17. (original) A method as in claim 16, wherein said phonetic searching further includes:

- (3) combining said words from said set of best words into said sequences, as a

function of the start time and the end times of said phonetic estimates corresponding to said words.

18. (original) A method as in claim 16, wherein said phonetic searching includes:

(3) combining said words using dynamic programming.

19. (original) A method as in claim 13, wherein said RSG is a grammar tree comprising nodes having certain of said syntactic and semantic information associated with each of said nodes.

20. (original) A method as in claim 13, further including:

E. defining a context associated with said phonetic stream by an application program; and

F. interpreting said set of semantic data with a semantic evaluator, in accordance with said context, and deriving a linguistic result therefrom.

21. (original) A method as in claim 20, wherein interpreting said set of semantic data includes, for each node, determining a category at a given node, as a function of said context, and applying said category to interpret values at said given node.

22. (original) A method as in claim 13, wherein generating said set of semantic data includes generating a semantic tree instance comprised of a set of nodes representing all valid interpretations of said sequences.

BM
23. (currently amended) A phonetic searcher, coupled to a database comprising a ~~context free~~ rich semantic grammar (RSG) tree including syntactic and semantic information at each node in said grammar tree, and configured to receive a phonetic stream of data and to generate a word list representing all valid words represented by said phonetic stream, as a function of syntactic information derived from derived said RSG tree.

AM
24. (currently amended) A grammar builder configured to combine words in a word path, wherein the grammar builder is coupled to a database comprising a context free grammar, including syntactic information, and is coupled to a database comprising a context free set of valid words representing valid interpretations of ~~corresponding to~~ a stream of phonetic estimates, wherein each of said phonetic estimates is represented as having a fixed start time and a plurality of end times, and wherein said grammar builder is configured to selectively combine words from said set of words as a function of said fixed start time and said end times of phonetic estimates corresponding said words to be combined.

25. (original) A grammar builder as in claim 24, wherein for each phonetic estimate, a score is associated with each of said end times, and wherein said score is related to a probability that said phonetic estimate is a certain word or syllable from said context free grammar.

26. (currently amended) A semantic parser coupled to a database having a context free rich semantic grammar (RSG) and configured to generate a context free set of semantic data as a function of a set of word sequences and said RSG, wherein said sequences include

words derived from a phonetic stream and said RSG, and said set of semantic data includes all valid interpretations of the sequences.

27. (original) A semantic parser as in claim 26, wherein the RSG is a grammar tree comprised of a plurality of nodes, one or more of said nodes including syntactic information and semantic information.

28. (original) A semantic parser as in claim 26, wherein said set of semantic data is a semantic tree.

29. (currently amended) A semantic tree evaluation tool coupled to an application program that defines a context and coupled to a memory including a semantic tree representing all valid interpretations of a phonetic stream, said semantic tree evaluation tool configured to generate a linguistic result as a single valid interpretation of said phonetic stream, in accordance with said context of the application program.

30. (original) A semantic evaluation tool as in claim 29, wherein said semantic tree is comprised of a plurality of nodes including semantic information, and wherein said semantic evaluation tool is configured to determine at each of said nodes a category, as a function of said context, and to apply to values at each node a corresponding category to determine said linguistic result.